INTEGRATED MICRO-OPTIC ARCHITECTURE FOR COMBINING AND DEPOLARIZING PLURAL POLARIZED LASER BEAMS

ABSTRACT

A multimode laser beam depolarization and combining architecture integrates a combiner for polarized multimode light beams with a multimode beam depolarizer, that produces a composite depolarized output beam optimized for application to a Raman optical amplifier. A high-order depolarizing 45° waveplate is used to effectively depolarize multimode laser beams produced by a Fabry-Perot (FP) laser. The high-order 45° waveplate has a length that achieves multi mode dispersion-dependent depolarization of the beam over its travel path through the crystal, and may comprise a birefringent material such as YVO_4 having a large difference between its extraordinary and ordinary indices of refraction.